California Regional Water Quality Control Board
Santa Ana Region

October 13, 2006

STAFF REPORT

ITEM: *10A.

SUBJECT: Amendment to Order No. 01-55, NPDES No. CA8000383, Waste Discharge and Producer/User Water Reclamation Requirements for the City of Corona's Wastewater Treatment Plant No.1 - Order No. R8-2006-0064

I. DISCUSSION:

A. Background.

On December 19, 2001, the Regional Board adopted Order No. 01-55, NPDES No. CA8000383, prescribing waste discharge and Producer/User Water Reclamation Requirements for the City of Corona's Wastewater Treatment Plant No.1, for the discharge of tertiary treated wastewater via outfall No. 001 into Butterfield Drain, which discharges to Temescal Creek, a tributary to Reach 3 of the Santa Ana River. Order No. 01-55 will expire on December 1, 2006.

On May 17, 2006, the City submitted an Application/Report of Waste Discharge for the renewal of Order No. 01-55. Plant No. 1 currently consists of preliminary treatment, two secondary treatment facilities, and a tertiary treatment facility. The tertiary treatment facility consists of sand filters and UV disinfection process.

On August 8, 2006, the City amended its Application/Report of Waste Discharge and notified Regional Board staff that the construction of a new chlorine contact Tank (CCT) that will be used as the new disinfection facility is completed and will start operation in mid -September. This new chlorine disinfection system will eventually replace the current UV system. A portion of the chlorine-disinfected wastewater will be discharged to Temescal Creek and the remainder will be delivered to recycled water customers. The City requested that Order No. 01-55 be amended to include requirements pertaining to the use of the new chlorine disinfection system, enabling the City to the use the new facility prior to the pending renewal of waste discharge requirements for the treatment plant.

Based on the City's request, this amendment specifies effluent limitations for total residual chlorine discharges to outfall No. 001 and requirements in accordance with the California Department of Health Services (CDHS) Title 22 for the use of a chlorine disinfection system.

B. Water Quality Based Effluent Limitations.

The Basin Plan specifies "To protect aquatic life, the chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/l." The proposed amendment incorporates total chlorine residual limits based on this objective.

C. California Department of Health Services Regulations:

Order No. 01-55 includes recycling requirements that were based on Title 22, Division 4, Chapter 3, Sections 60301 through 60355, California Code of Regulations for the use of a UV Disinfection System but not for the use of a chlorine disinfection system. This amendment includes requirements pertaining to the use of a chlorine disinfection system that are also based on Title 22.

As a condition of approval for the use of a chlorine disinfection system at the facility, CDHS requested that tracer studies be conducted on the chlorine contact tank at low, mid and high flow rates. To date, the tracer studies have not been completed on the chlorine contact tank. The CDHS approval for the sole use of the chlorine contact tank for tertiary disinfection has not been issued. However, in order for the City to be able to conduct accurate tracer studies and still be able to produce recycled water to the increasing number of recycled water customers throughout the City, CDHS has given the City permission to distribute recycled water from the chlorine contact tank with a 0.6 baffling credit, if the recycled effluent has first been treated with UV disinfection. Once the tracer studies are completed and modal contact times (CT) for the various flow rates tested comply with CDHS requirements, CDHS will give approval of the use of the chlorine contact tank as the sole disinfectant. At that time, the City will place the UV disinfection system on stand-by and divert plant effluent from the equalization basins to the chlorine contact tank.

D. Proposed changes to the Order.

Additions are bold and highlighted. Deletions are stricken-out.

1. Order No. 01-55, Findings, page 2 of 34, modify Finding 5.c. as follows:

   c. Plant 1B tertiary treatment train consists of coagulation, continuous backwash sand filtration, ultraviolet light (UV) disinfection **and chlorine disinfection**.

2. Order No. 01-55, page 12 of 32, Discharge Specifications, add sub-paragraph A.1.e as follows:

   e. Total Residual Chlorine Limitations:

FOR DISCHARGE SERIAL 001	
Constituent	**Instantaneous**
	mg/L
Total Chlorine Residual[7]	**0.1**

Footnote 7: **See Section F. 13., "Compliance Determination."**

3. Order No. 01-55, page 13 of 32, Discharge Specifications, modify subparagraph A.2.b.(1) as follows:

   (1) A disinfection process that, when combined with the filtration process, demonstrates inactivation and/or removal of 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration. Where ultraviolet (UV) disinfection is used, UV disinfection shall deliver under worst operating conditions a minimum UV dose of 140 milli-watts seconds per square centimeter (mW-s/cm2) at maximum weekly flow and 100 mW-s/cm2 at peak flow (maximum day), unless otherwise approved by the Department of Health Services. **The Discharger's UV disinfection system shall not be utilized as the sole source of disinfection except under emergency conditions after December 31, 2006 unless it is recommissioned under CDHS oversight.**

   Where Chlorine disinfection is used, the chlorine disinfection process following filtration shall provide a CT (the product of total chlorine residual and modal contact time measured at the same point) value of

not less than 450 milligram-minutes per liter at all times with a modal contact time of at lest 90 minutes, based on peak dry weather design flow. If chlorine disinfection is applied immediately after UV disinfection, the required CT may be multiplied by factor of 0.6.

4. Order No. 01-55, page 24 of 32, Compliance Determinations, add new subparagraph F.13., as follows:

13. Compliance determinations for total chlorine residual shall be based on 99% compliance. To determine 99% compliance with the effluent limitation for total chlorine residual, the following conditions shall be satisfied:

a. The total time during which the total chlorine residual values are above 0.1 mg/L (instantaneous maximum value) shall not exceed 7 hours and 26 minutes in any calendar month;
b. No individual excursion from 0.1 mg/L value shall exceed 5 minutes; and
c. No individual excursion shall exceed 5.0 mg/L.

5. Monitoring and Reporting Program No. 01-55, page 10 of 23, Effluent Monitoring Table, add monitoring for total residual chlorine and CT into the table between the parameter Total Inorganic Nitrogen and Iron. (Note: Effluent Monitoring Table not completely shown, only the added parameters are shown):

Constituent	Units	Type of Sample	Minimum Frequency of Sampling & Analysis
Total Residual Chlorine	**mg/l**	**Recorder**	**Continuous**
CT	**mg/L-min**	**Recorder**	**Continuous**

II. WRITTEN COMMENTS

Interested persons are invited to submit written comments on the proposed discharge limits and the staff report. Comments should be submitted by September 25, 2006, either in person or by mail to:

Jane Qiu
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

III. INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Jane Qiu of the Regional Board at (951) 320-2008. Copies of the application, proposed waste discharge requirements, Fact Sheet, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying between the hours of 9:00 a.m. and 3:00 p.m., Monday through Friday (excluding holidays).

IV. REGISTER OF INTERESTED PERSONS:

Any person interested in a particular application or group of applications may leave his/her name, address, and phone number as part of the file for an application.

V. PUBLIC HEARING:

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements as follows:

DATE:	October 13, 2006
TIME:	9:00 a.m.
PLACE:	Eastern Municipal Water District 2270 Trumble Road Perris, California

RECOMMENDATION:

Adopt Order No. R8-2006-0064, amending Order No. 01-55, NPDES No. CA8000383, as presented.

Comments were solicited from the following agencies:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5) – Doug Eberhardt
U.S. Army District, Los Angeles, Corps of Engineers, Regulatory Branch
U.S. Fish and Wildlife Service, Carlsbad
State Water Resources Control Board, Office of the Chief Counsel
State Water Resources Control Board, Division of Water Quality
State Department of Water Resources, Glendale

State Department of Fish and Game, Ontario
State Department of Health Services, Carpinteria - Jeff Stone
State Department of Health Services, San Diego – Steve Williams
Riverside County Environmental Health Services – Sandy Bunchek
Riverside County Flood Control and Water Conservation District – Jason Uhley
Santa Ana River Discharger's Association (SARDA)
Orange County Water District - Nira Yamachika
Santa Ana River Discharger's Association
Santa Ana Watershed Project Authority
Orange County Coastkeeper
Lawyers for Clean Water C/c San Francisco Baykeeper

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. R8-2006-0064
Amending Order No. 01-55, NPDES No. CA8000383
Waste Discharge and Producer/User Reclamation Requirements

for

The City of Corona
Wastewater Treatment Plant No.1
Corona, Riverside County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Board), finds that:

1. On December 19, 2001, the Regional Board adopted Order No. 01-55, NPDES No. CA8000383, prescribing Waste Discharge and Producer/User Water Reclamation Requirements for the City of Corona's Wastewater Treatment Plant No.1, for the discharge from Plant No. 1 of up to 9 million gallons per day (mgd) of tertiary treated effluent to Temescal Creek, Reach 1A, for the discharge of up to 5.5 mgd of secondary treated effluent to three percolation ponds, and for the production and use of recycled water. Cumulative flows for discharges to Serial 001 (Temescal Creek discharge) and Serial 002 (pond discharge) will not exceed 11.5 mgd

2. On May 17, 2006, the Discharger submitted an Application/Report of Waste Discharge to renew Order No. 01-55, which will expire on December 1, 2006. Plant No. 1 currently consists of preliminary treatment, two secondary treatment facilities, and a tertiary treatment facility. The tertiary treatment facility consists of sand filters and a UV disinfection process.

3. On August 8, 2006, the Discharger amended its renewal application to include a new chlorine contact tank (CCT) as a new disinfection facility. This new chlorine disinfection system will eventually replace the current UV system. The Discharger informed Regional Board staff that discharges of chlorine-disinfected wastewater to Temescal Creek and delivery to recycled water users will be implemented as soon as the permit is amended.

4. It is appropriate to amend Order No. 01-55 to include effluent limitations for CT (the product of total chlorine residual and modal contact time measured at the same point), in light of the proposed changes in disinfection treatment at the facility.

5. In accordance with Water Code Section 13389, issuance of the waste discharge requirements for this discharge is exempt from those provisions of the California Environmental Quality Act contained in Chapter 3 (commencing with Section 21100), Division 13 of the Public Resources Code.

6. The Board has notified the discharger and other interested agencies and persons of its intent to amend waste discharge requirements for the discharge and has provided them with an opportunity to submit their written views and recommendations.

7. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 01-55 be amended as follows:

1. Order No. 01-55, Findings, page 2 of 34, modify Finding 5.c. as follows:

   c. Plant 1B tertiary treatment train consists of coagulation, continuous backwash sand filtration, ultraviolet light (UV) disinfection and chlorine disinfection.

2. Order No. 01-55, page 12 of 34, Discharge Specifications, add sub-paragraph A.1.e as follows:

   e. Total Residual Chlorine Limitations:

FOR DISCHARGE SERIAL 001	
Constituent	Instantaneous Limit, mg/L
Total Chlorine Residual[7]	0.1

Footnote 7: See Section F. 13., "Compliance Determination."

3. Order No. 01-55, page 13 of 32, Discharge Specifications, modify subparagraph A.2.b.(1) as follows:

   (1) A disinfection process that, when combined with the filtration process, demonstrates inactivation and/or removal of 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration. Where ultraviolet (UV) disinfection is used, UV disinfection shall deliver under worst operating conditions a minimum UV dose of 140 milli-watts seconds per square centimeter (mW-s/cm2) at maximum weekly flow and 100 mW-s/cm2 at peak flow (maximum day), unless otherwise approved by the Department of Health Services. The Discharger's UV disinfection system shall not be utilized as the sole source of disinfection except under emergency conditions after December 31, 2006 unless it is recommissioned under CDHS oversight.

   Where Chlorine disinfection is used, the chlorine disinfection process following filtration shall provide a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at lest 90

minutes, based on peak dry weather design flow. If chlorine disinfection is applied immediately after UV disinfection, the required CT may be multiplied by factor of 0.6.

4. Order No. 01-55, page 24 of 32, Compliance Determinations, add new subparagraph F.13., as follows:

   13. Compliance determinations for total chlorine residual shall be based on 99% compliance. To determine 99% compliance with the effluent limitation for total chlorine residual, the following conditions shall be satisfied:

       a. The total time during which the total chlorine residual values are above 0.1 mg/L (instantaneous maximum value) shall not exceed 7 hours and 26 minutes in any calendar month;
       b. No individual excursion from 0.1 mg/L value shall exceed 5 minutes; and
       c. No individual excursion shall exceed 5.0 mg/L.

5. Monitoring and Reporting Program No. 01-55, page 10 of 23, Effluent Monitoring Table, add monitoring for total residual chlorine and CT into the table between the parameter Total Inorganic Nitrogen and Iron. (Note: Effluent Monitoring Table not completely shown, only the added parameters are shown):

Constituent	Units	Type of Sample	Minimum Frequency of Sampling & Analysis
Total Residual Chlorine	mg/l	Recorder	Continuous
CT	mg/L-min	Recorder	Continuous

6. All other conditions and requirements of Order No. 01-55 shall remain unchanged.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the forgoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on October 13, 2006.

Gerard J. Thibeault
Executive Officer